

**What is claimed is:**

1           1. A device for communicating in a communications  
2 system, comprising:

3           a receiver configurable in a plurality of states,  
4 wherein in each state the physical layer headers associated  
5 with received frames of information are usable to determine  
6 the format in which the received frames of information are  
7 to be decoded and are interpreted differently relative to the  
8 interpretation of the physical layer headers in another  
9 state.

1           2. The device of claim 1, wherein:

2           the physical layer headers indicates a group of signal  
3 formats that varies depending upon the state in which the  
4 receiver is configured.

1           3. The device of claim 1, wherein:

2           the receiver is configurable in a first state when  
3 received frames of information includes at least one of  
4 speech and FACCH information, in a second state during speech  
5 silence periods, and a third state when the received frames  
6 of information transition from speech silence period to a  
7 talk spurt period.

1           4. The device of claim 1, wherein:  
2           the receiver is configurable in a first state during  
3           periods of receiving higher priority information, in a second  
4           state during periods of receiving lower priority information,  
5           and a third state when the received frames of information  
6           transition from having lower priority information to having  
7           higher priority information.

1           5. The device of claim 4, wherein:  
2           received frames of higher priority information comprise  
3           speech frames; and  
4           received frames of lower priority information comprise  
5           best effort data.

1           6. The device of claim 4, wherein:  
2           received frames of higher priority information are  
3 diagonal interleaved;  
4           received frames of lower priority information are block  
5 interleaved; and  
6           physical layer headers of a first set of successively  
7 received frames of higher priority information indicate that  
8 the first set of received frames contain higher priority  
9 information when the physical headers of the first set of  
10 received frames are decoded as block interleaved frames.

1           7. The device of claim 6, wherein:  
2           the physical layer headers of the received frames of  
3 higher priority information contain zeros.

1           8. The device of claim 3, wherein:  
2           the receiver enters the third state when the physical  
3 layer header associated with the received frames of  
4 information indicate that the associated received frames of  
5 information include speech information.

1           9. The device of claim 3, wherein:  
2           the receiver enters the third state when AMR  
3           identification markers associated with the received frames  
4           of information indicate commencement of receiving speech  
5           information.

1           10. The device of claim 3, wherein:  
2           the receiver enters the first state from the third state  
3           when a physical layer header associated with a received frame  
4           of information indicates that the associated received frame  
5           of information includes speech and the associated received  
6           frame of information is successfully decoded as speech  
7           information.

1           11. The device of claim 3, wherein:  
2           the receiver enters the second state from the third  
3           state when a physical layer header associated with a received  
4           frame of information indicates that the associated received  
5           frame of information includes speech and the associated  
6           received frame of information is unsuccessfully decoded as  
7           speech information.

1           12. The device of claim 3, wherein:  
2           the receiver enters the second state from the third  
3           state when the receiver receives and decodes one or more  
4           received first frames having FACCH information and one or  
5           more received second frames immediately following the one or  
6           more received first frames do not include FACCH information  
7           and speech information.

1           13. The device of claim 1, wherein:  
2           the receiver is configurable in a first state when  
3           received frames of information includes at least one of  
4           speech and FACCH information and in a second state during  
5           speech silence periods; and  
6           the receiver transitions between the first state and the  
7           second state even in an absence of identification markers  
8           indicating the type of information in the received frames of  
9           information.

1           14. The device of claim 13, wherein:  
2           the receiver is configurable in a third state when the  
3           received frames of information transition from a speech  
4           silence period to a talk spurt period; and  
5           the receiver transitions between the first state, the  
6           second state and the third state even in an absence of  
7           identification markers indicating the type of information in  
8           the received frames of information.

1           15. The device of claim 1, wherein the receiver  
2           comprises:  
3           an input circuit for receiving the received frames of  
4           information;  
5           a decoding circuit for decoding the received frames of  
6           information into any of a plurality of signal formats; and  
7           a control circuit for controlling the decoding circuit  
8           based upon the values of the physical layer headers  
9           associated with the received frames of information.

1           16. The device of claim 1, wherein:  
2           the receiver is configurable in a first state when  
3           received frames of information include speech related  
4           information and in a second state during speech silence  
5           periods; and  
6           the receiver transitions between the first state and the  
7           second state based upon AMR identification markers associated  
8           with the received frames of information.

1           17. A communications device for participating in a  
2       communication of information, comprising:  
3           a receiver, comprising:  
4               an input circuit for receiving transmitted frames  
5       of information;  
6               a decoding circuit for decoding the received frames  
7       of information into any of a plurality of signal formats; and  
8               a control circuit configurable into a plurality of  
9       states based in part upon the AMR identification markers of  
10      the received frames of information, the decoding circuit  
11      decoding the received frames of information based upon the  
12      state of the control circuit.

1           18. The communications device of claim 17, wherein:  
2               in each state the physical layer headers of the received  
3      frames of information are used to determine the signal format  
4      in which the received frames of information are to be  
5      decoded, the physical layer headers representing a varying  
6      group of signal formats that varies based upon the state in  
7      which the control circuit is configured.



1           19. The communications device of claim 17, wherein:  
2           the control circuit transitions between states even if  
3           a transmitted AMR identification marker is not received by  
4           the receiver.

1           20. The communications device of claim 17, wherein:  
2           the receiver is configurable in a first state when  
3           received frames of information include speech related  
4           information, in a second state during speech silence periods,  
5           and a third state when the received frames of information  
6           transition from a speech silence period to a talk spurt  
7           period.

1           21. The communications device of claim 17, wherein:  
2           the receiver enters the third state when the physical  
3           layer header associated with the received frames of  
4           information indicate that the associated received frames of  
5           information include speech information.

1           22. The communications device of claim 20, wherein:  
2           the receiver enters the first state from the third state  
3           when a physical layer header associated with a received frame  
4           of information indicates that the associated received frame  
5           of information includes speech and the associated received  
6           frame of information is successfully decoded as speech  
7           information.

1           23. The communications device of claim 20, wherein:  
2           the receiver enters the second state from the third  
3           state when a physical layer header associated with a received  
4           frame of information indicates that the associated received  
5           frame of information includes speech and the associated  
6           received frame of information is unsuccessfully decoded as  
7           speech information.

1           24. The communications device of claim 20, wherein:  
2           the receiver enters the second state from the third  
3           state when the receiver receives and decodes one or more  
4           received first frames having FACCH information and one or  
5           more received second frames immediately following the one or  
6           more received first frames do not include FACCH information  
7           and speech information.

1           25. The communications device of claim 17, wherein:

2           the receiver is configurable in a first state when  
3           received frames of information include at least one of speech  
4           and FACCH information and in a second state during speech  
5           silence periods; and

6           the receiver transitions between the first state and the  
7           second state even in an absence of identification markers  
8           indicating the type of information in the received frames of  
9           information.

1           26. The communications device of claim 25, wherein:

2           the receiver is configurable in a third state when the  
3           received frames of information transition from a speech  
4           silence period to a talk spurt period; and

5           the receiver transitions between the first state, the  
6           second state and the third state even in an absence of  
7           identification markers indicating the type of information in  
8           the received frames of information.

1           27. The communications device of claim 17, wherein:  
2           the receiver is configurable in a first state when  
3           received frames of information include at least one of speech  
4           and FACCH information and in a second state during speech  
5           silence periods;  
6           received frames of information are decoded as diagonal  
7           interleaved signals when in the first state and as block  
8           interleaved signals when in the second state; and  
9           physical layer headers associated with the received  
10          frames of information indicating speech are the same when  
11          decoded as diagonal interleaved signals and as block  
12          interleaved signals.

1           28. A device for communicating multiplexed signals  
2     having frames of higher priority information and frames of  
3     lower priority information, comprising:

4           a receiver configurable into a first state for decoding  
5     received frames of higher priority information and a second  
6     state for decoding the received frames of lower priority,  
7     state transitions of the receiver being triggered by AMR  
8     identification markers associated with the received frames  
9     of information.

1           29. The communications device of claim 28, wherein:

2           the received frames of information may be decoded by the  
3     receiver in the first state as having any signal format from  
4     a first set of signal formats;

5           the received frames of information may be decoded by the  
6     receiver in the second state as having any signal format from  
7     a second set of signal formats, the second set of signal  
8     formats being different from the first set of signal formats.

1           30. The communications device of claim 28, wherein:  
2           the receiver transitions between the first and second  
3           states even in the event AMR identification markers  
4           indicating a transition in frame information is missed, based  
5           upon the physical layer headers associated with the received  
6           frames of information.

1           31. The communications device of claim 28, wherein:  
2           the receiver is configurable into a third state when the  
3           received frames of information transition from having lower  
4           priority information to higher priority information.